



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/573,642

08/20/2008

Guy Gentet

12928/10027

8964

23280 7590 03/03/2010  
Davidson, Davidson & Kappel, LLC  
485 7th Avenue  
14th Floor  
New York, NY 10018

EXAMINER

BOYD, ERIN M

ART UNIT

PAPER NUMBER

3663

MAIL DATE

DELIVERY MODE

03/03/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.



UNITED STATES PATENT AND TRADEMARK OFFICE

---

Commissioner for Patents  
United States Patent and Trademark Office  
P.O. Box 1450  
Alexandria, VA 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/573,642  
Filing Date: August 20, 2008  
Appellant(s): GENTET ET AL.

---

William C. Gehris  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 11/12/2009 appealing from the Office action mailed 5/8/2009.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

5625657

Gallacher

4-1997

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 15-19 and 21-28 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,625,657 (herein after "Gallacher").

3. Regarding Claim 15, Gallacher teaches a nuclear fuel assembly 10 comprising a group of nuclear fuel rods 3 and a support skeleton, the assembly comprising two nozzles 12, 26; guide tubes 14 interconnecting the nozzles 12, 26; and spacer grids 18 secured to the guide tubes 14 (figure 2) and serving to hold the rods 3; the nuclear fuel

Art Unit: 3663

rods 3 extending along a longitudinal direction and being disposed in a substantially regular array; the assembly 10 including at least one support skeleton reinforcing device 50 disposed between two successive spacer grids 18 and secured to the guide tubes 14 (note: the guide tubes are secured to the fuel rods and the reinforcing device is secured to the fuel rods; thus the guide tubes are indirectly secured to the reinforcing device), and the reinforcing device 50 being disposed inside the group of rods 3 and presenting a transverse extent that is less than the transverse extent of the array of rods 3 (figures 1 and 5B).

4. Regarding Claim 16, Gallacher teaches an assembly 10 wherein the reinforcing device 50 does not extend into a peripheral layer of rods 3 (figure 5B).

5. Regarding Claim 17, Gallacher teaches an assembly 10 wherein the reinforcing device 50 does not extend between the peripheral layer of rods 3 and an adjacent layer of rods 3 (figure 5B).

6. Regarding Claim 18, Gallacher teaches an assembly 10 wherein the reinforcing device 50 extends longitudinally substantially as far as a spacer grid 18 immediately above the reinforcing device 50 (figure 5B).

7. Regarding Claim 19, Gallacher teaches an assembly 10 wherein the reinforcing device 50 defines at least one transverse flow passage above the spacer grid 18

Art Unit: 3663

immediately beneath the reinforcing device 50, the passage serving to pass a cooling fluid for flowing through the assembly 10 (figure 5B).

8. Regarding Claim 21, Gallacher teaches an assembly 10 wherein the bottom end of the reinforcing device 50 is disposed at a distance from the spacer grid 18 immediately beneath the reinforcing device 50 so as to define the transverse flow passage for the cooling fluid (figure 5B).

9. Regarding Claim 22, Gallacher teaches an assembly 10, wherein the reinforcing device is secured to at least two guide tubes (note that indirectly secured meets the claim limitation).

10. Regarding Claim 23, Gallacher teaches an assembly 10 wherein the reinforcing device 50 is a substantially plane plate (figure 4A).

11. Regarding Claim 24, Gallacher teaches an assembly 10 wherein the reinforcing device 50 is substantially parallel to one of faces of the group of nuclear fuel rods 3 (figure 5B).

12. Regarding Claim 25, Gallacher teaches an assembly 10 wherein the reinforcing device 50 is an angle member forming at least one L-shape (figure 4A).

Art Unit: 3663

13. Regarding Claim 26, Gallacher teaches an assembly 10 wherein the angle member is disposed in a corner of the group of nuclear fuel rods 3 (figure 5B).

14. Regarding Claim 27, Gallacher teaches an assembly 10 wherein the reinforcing device 50 does not have a mixer arrangement for mixing the cooling fluid that is to flow through the assembly 10 (figure 4A).

15. Regarding Claim 28, Gallacher teaches an assembly 10 wherein the reinforcing device 50 has cells for receiving the nuclear fuel rods 3, wherein the dimensions of each of the cells are greater than the diameters of the nuclear fuel rods 3 (figure 2 and 5B).

***Claim Rejections - 35 USC § 103***

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,625,657 ("Gallacher").

18. Regarding Claim 20, Gallacher teaches an assembly 10 wherein the reinforcing device 50 extends longitudinally (figure 5B) and wherein a passage is formed by an

Art Unit: 3663

opening formed through a bottom end of the reinforcing device 50 (figure 3), but fails to specifically teach that said device extends longitudinally substantially as far as the spacer grid immediately below the reinforcing device.

However, one of ordinary skill in the art is expected to routinely experiment with the parameters, especially when the specifics are not disclosed, so as to ascertain the optimum or workable ranges for a particular use. For instance, the distance which the reinforcing device 50, of Gallacher, extends depends on the extent of damage to the spacer grid or fuel rod, the amount of vibration or turbulence in the core, etc.

Accordingly, it would have been obvious through routine experimentation and optimization, for one of ordinary skill in the art to construct the reinforcing device extend longitudinally substantially as far as the spacer grid immediately below the reinforcing device.

#### **(10) Response to Argument**

Appellant's argument regarding claim 15 is that Gallacher fails to show "at least one support skeleton reinforcing device disposed between two successive spacer grids and secured to the guide tubes", as recited in claim 15, because the reinforcing device of Gallacher teaches that a small amount of sliding is permitted between the fuel rods and spacer grids to accommodate minor axial changes in the axial length of the fuel rods during irradiation (Gallacher; column 1, lines 46-53). Appellant argues that the term "secure" means "firmly fixed" or "fastened". In support of this definition, the appellant cites an online dictionary (i.e. [www.thefreedictionary.com](http://www.thefreedictionary.com)). The examiner



Art Unit: 3663

finds that the definition of “fasten” is “to join” or “to connect” (see Webster’s *New Basic Dictionary*).

It is clear that the fuel rod is connected / joined to the spacer grid even though a limited amount of sliding between them is permitted. In fact, the spacer grid and fuel rods in the fuel assembly cannot be disconnected from each other by said limited sliding alone. Disassembly of the fuel assembly would be necessary to separate the fuel rods from the spacer grid. Objects may be secured to each other although a small, limited amount of movement between them is permitted.

Furthermore, claim 15 recites that the spacer grid is secured to the guide tube (line 5); however, one of ordinary skill in the art would fully know that spacer grids allow for limited shifting between the grid and guide tube in order to accommodate expansion due to high temperatures and irradiation. Thus, the term “secured”, in the context of the art, is understood as permitting a small amount of sliding.

Regarding claim 20, applicant argues that there is no reason or motivation for one of ordinary skill in the art to extend the repair grid of Gallacher “longitudinally as far as the spacer grid immediately below the reinforcing device”. As applicant states, the repair grid of Gallacher is intended to cover the damaged fuel rod (page 6, lines 9-10). A motivation or reason for extending the repair grid (reinforcing device) to the spacer grid is to cover damage that is near the spacer grid. Examiner states in the previous (final) office action that the distance which the reinforcing device of Gallacher extends can depend on the extent of damage to the spacer grid or fuel rod, the amount of

Art Unit: 3663

vibration or turbulence in the core, etc; therefore, one of ordinary skill in the art is expected to routinely experiment with the parameters so as to ascertain the optimum or workable ranges for a particular use.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/E. M. B./

Examiner, Art Unit 3663

/Jack W. Keith/

Supervisory Patent Examiner, Art Unit 3663

Conferees:

/J. W. K./

Supervisory Patent Examiner, Art Unit 3663

Heather Shackelford /hcs/

Conferee